

What is claimed is:

1. A surface acoustic wave device comprising:
a piezoelectric substrate;
a first interdigital transducer provided on a surface of the piezoelectric substrate;
a second interdigital transducer provided on the surface of the piezoelectric substrate such that the second interdigital transducer is offset from a direction in which a surface acoustic wave excited by the first IDT propagates;
a first edge provided on the piezoelectric substrate to reflect the excited surface acoustic wave to the first and second interdigital transducers; and
a first coupler having a plurality of metal strips and disposed on the piezoelectric substrate, the multistrip coupler provided between the first edge of the piezoelectric substrate and at least one of the first and second interdigital transducers so as to be adjacent to the first and second interdigital transducers; wherein
the surface acoustic wave device operates using a shear horizontal surface wave.

2. A surface acoustic wave device according to Claim 1, further comprising a second coupler on the piezoelectric substrate such that the first and second couplers are interposed between the first and second interdigital transducers.

3. A surface acoustic wave device according to Claim 2, further comprising a third interdigital transducer located between the first coupler and the second coupler.

4. A surface acoustic wave device according to claim 3, wherein said first interdigital transducer is electrically connected to a first input terminal, and said third interdigital transducer is electrically connected to a second input terminal, said first and second input terminals constitute balanced input terminals.

5. A surface acoustic wave device according to Claim 1, further comprising a second edge on the piezoelectric substrate opposite to said first edge of the piezoelectric substrate, wherein the second edge is located on a side of at least one of the first and second interdigital transducers where the first coupler is not provided, and the second edge is not perpendicular to the surface acoustic wave propagating direction.

6. A surface acoustic wave device according to Claim 1, further comprising a resin film covering the first and second interdigital transducers.

7. A surface acoustic wave device according to claim 5, wherein said resin film is a gel resin having a Shore hardness of approximately 30 or less.

8. A surface acoustic wave device according to claim 1, wherein said piezoelectric substrate includes a second edge opposite to said first edge of said piezoelectric substrate, at least one of said first and second interdigital transducers has an edge which is flush with said second edge of said piezoelectric substrate.

9. A surface acoustic wave device according to claim 1, wherein said first edge is spaced from a center of the metal strip closest to said first edge at a distance that is substantially equal to an integer multiple of approximately $W/2$, where W is a sum of a width of the metal strip and a space between the metal strips.

10. A communication apparatus comprising:

at least one surface acoustic wave device including:

a piezoelectric substrate;

a first interdigital transducer provided on a surface of the piezoelectric substrate;

a second interdigital transducer provided on the surface of the piezoelectric substrate such that the second interdigital transducer is offset from a direction in which a surface acoustic wave excited by the first IDT propagates;

a first edge provided on the piezoelectric substrate to reflect the excited surface acoustic wave to the first and second interdigital transducers; and

a first coupler having a plurality of metal strips and disposed on the piezoelectric substrate, the multistrip coupler provided between the first edge of the piezoelectric substrate and at least one of the first and second interdigital transducers so as to be adjacent to the first and second interdigital transducers; wherein

the surface acoustic wave device operates using a shear horizontal surface wave.

11. A communication apparatus according to Claim 10, further comprising a second coupler on the piezoelectric

substrate such that the first and second couplers are interposed between the first and second interdigital transducers.

12. A communication apparatus according to Claim 11, further comprising a third interdigital transducer located between the first coupler and the second coupler.

13. A communication apparatus according to Claim 10, further comprising a second edge on the piezoelectric substrate opposite to said first edge of the piezoelectric substrate, wherein the second edge is located on a side of at least one of the first and second interdigital transducers where the first coupler is not provided, and the second edge is not perpendicular to the surface acoustic wave propagating direction.

14. A communication apparatus according to Claim 10, further comprising a resin film covering the first and second interdigital transducers.

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15. A surface acoustic wave device comprising:
a piezoelectric substrate;
at least two first interdigital transducers provided on a surface of the piezoelectric substrate;
at least two second interdigital transducers provided on the surface of the piezoelectric substrate; and
a coupler having a plurality of metal strips and disposed on the piezoelectric substrate, the multistrip coupler located between a pair of said at least two first interdigital transducers, and between a pair of said at least

two second interdigital transducers so as to be adjacent to the first and second interdigital transducers; wherein the surface acoustic wave device operate using a shear horizontal surface wave.

16. A surface acoustic wave device according to claim 15, further comprising a resin film covering the first and second interdigital transducers.

17. A surface acoustic wave device according to claim 16, wherein said resin film is a gel resin having a Shore hardness of approximately 30 or less.